



DELIVERING MEASURABLE ROI

## **The Value of Integration**

# How to improve operational efficiency and cut costs? The dilemma facing today's building owners, facilities managers and tenants.



## TODAY'S CHALLENGES

Today's building owners, facilities managers and tenants face a dilemma: How to manage ever-decreasing budgets against ever-demanding targets? As buildings become more sophisticated there is a greater need to create and maintain a safer, more secure and comfortable environment – all as cost-effectively as possible. The intelligent way to achieve these goals is through a holistic approach to building, security and life safety management systems.

## Integration Drivers / Resisters

### DRIVING FORCES

- Lower operational costs
- Increase in efficiency
- Need for improved energy management
- Convergence: integration of IP network
- Consistent information display
- First level automated response to events
- Growth in IT literacy and usage
- Regulatory compliance

### RESISTING FORCES

- Traditional contractual paths
- Poorly articulated benefits
- Industry needs not understood by many
- Technology-driven
- Organizational structures (and politics)
- Image perception – too complex and expensive
- Market is risk-averse

## AN INTELLIGENT SOLUTION IS KEY

Traditional building management systems have grown up around separate, stand-alone applications for HVAC, energy management, fire, CCTV, access control and lighting – each with its own monitoring and control station. While these individual building, security and life safety management solutions provide

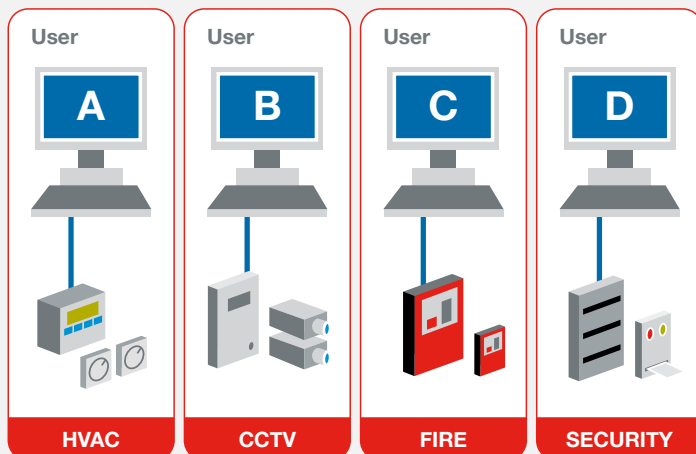
clear benefits to end users, information is restricted to narrow silos. Separating data slows response times and blurs facts in an emergency.

The real power lies in managing them as one, intelligent solution with a single point of control. Adopting an integrated approach – a data management engine – facilitates

information sharing between departments. It delivers an enterprise-wide view and enables automated building control processes to perform on the basis of all available information within the different systems – increasing productivity yet reducing costs (installation and life cycle) and risk.

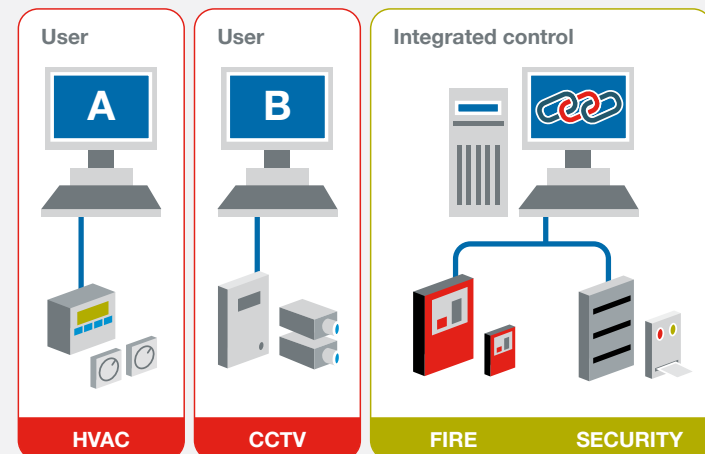
This system architecture shows the transition from a non-integrated to a fully integrated solution:

### Non-integration ▶▶▶



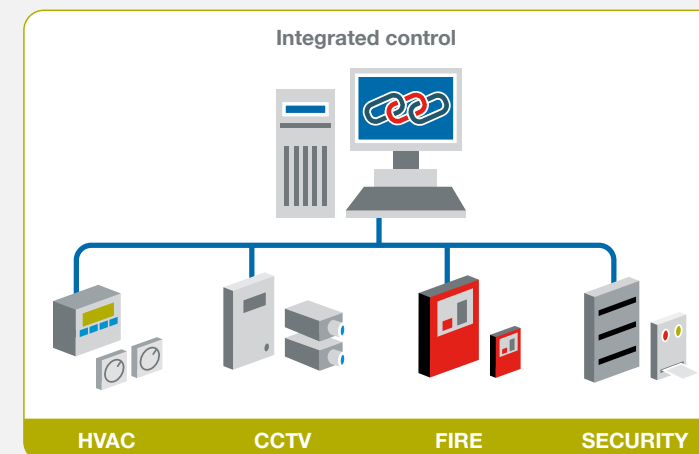
Silo processes with little interaction.

### Partial integration ▶▶▶



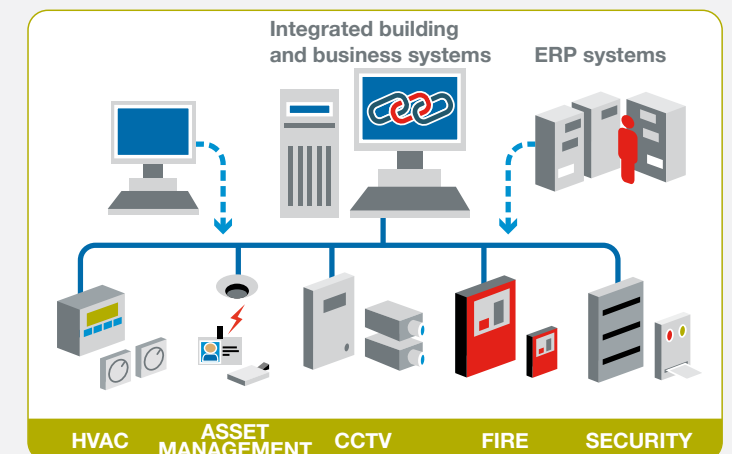
Interaction provides a platform to develop applications that are scalable, interoperable, available and manageable.

### Total integration ▶▶▶



No real embedded business intelligence.

### Enterprise-wide integration ▶▶▶



Transition from sharing information to managing information with a common business model throughout the organization.

# An intelligent approach to building, security and life safety management drives productivity improvement and innovation, and reduces risk and costs.



## WHAT IS AN INTELLIGENT BUILDING?

An intelligent building enables you to do more with less. It integrates core building, security and life safety management systems and utilizes automated monitoring and control for maximum operational and cost efficiencies – without detriment to building occupants. It provides one common platform to develop applications which are scalable, interoperable and manageable from a single point: a PC.

## WHAT IS THE VALUE OF AN INTELLIGENT BUILDING?

Putting intelligence into a building doesn't add cost long-term. It delivers measurable value and return on investment at the install stage and over the life span of a building. And with departments often vying for limited resources, working together, towards the same goal, delivers many benefits:

### Increased functionality and operational efficiencies

- Peer-to-peer control
- Centralized events storage
- Knowledge sharing, access to information from many sources with consistent information display
- Informed, timely decision-making/ response to alarm events
- Data transparency optimizing uptime
- Inherent flexibility supporting changing business needs
- Cost savings on floor plan changes
- Optimal efficiency in leveraging advanced procedures that automatically make decisions based on input from multiple disparate systems

### Reduced operational costs (typically 20%)

- More efficient deployment of resources
- Energy savings through optimization of energy management
- Improved employee productivity, staff are more comfortable and empowered
- Simplified training requirements

### Lower installed costs

- Convergence: integration of IP networks
- Leveraging the use of cabling infrastructure
- Clearer project management
- Compatibility – single solutions provider

### Increased safety and security

- “Big picture” perspective
- First level automated response to events
- Reduction in unwanted alarms

### Risk mitigation

- Strategic control: improved process and control of data
- Easy identification/expansion of system and introduction of new technology
- Improved compliance
- Multi-vendor solution with true open technology

### Green building

- Reduces the use of redundant wiring, conduit and labor required to install systems
- Achieve more comprehensive energy savings strategies with a higher level of integration between systems – potentially higher LEED points
- Lower use of materials and resources in the building for both installation and operation

### Economic advantages

- Improved ROI over life span of building
- Data transparency
- Inherent flexibility: easy configuration
- Improved occupancy rates
- Opportunity for additional revenue streams: above-market rents
- Greater value to all stakeholders: owners, operators and occupants

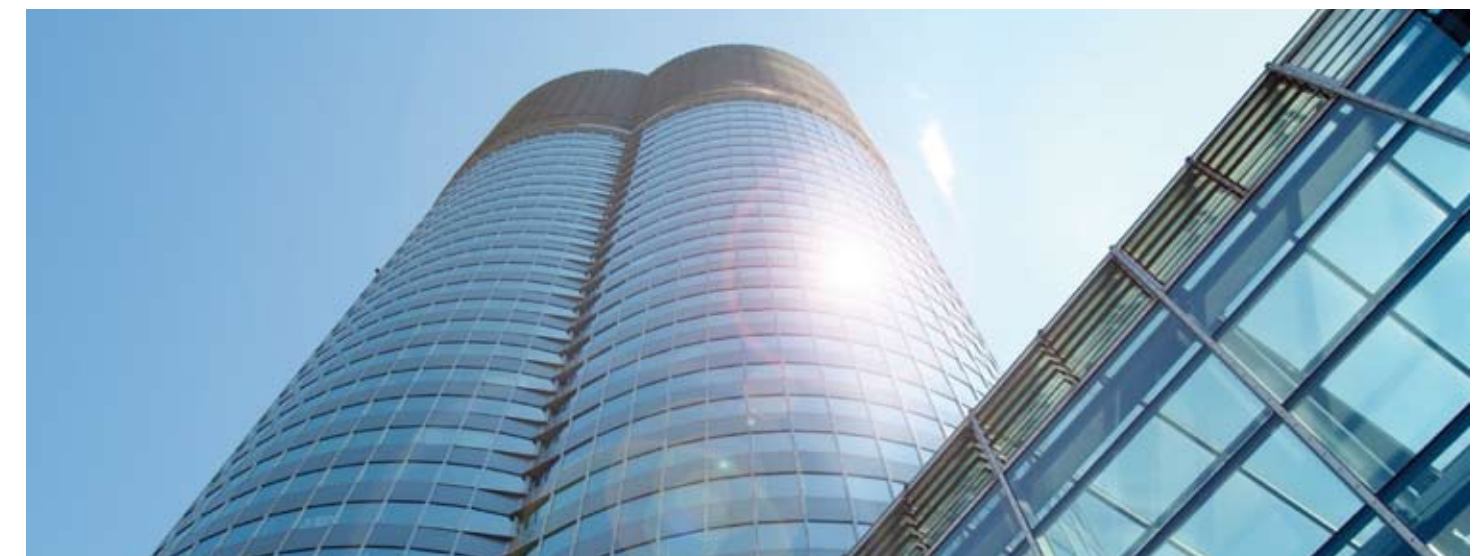
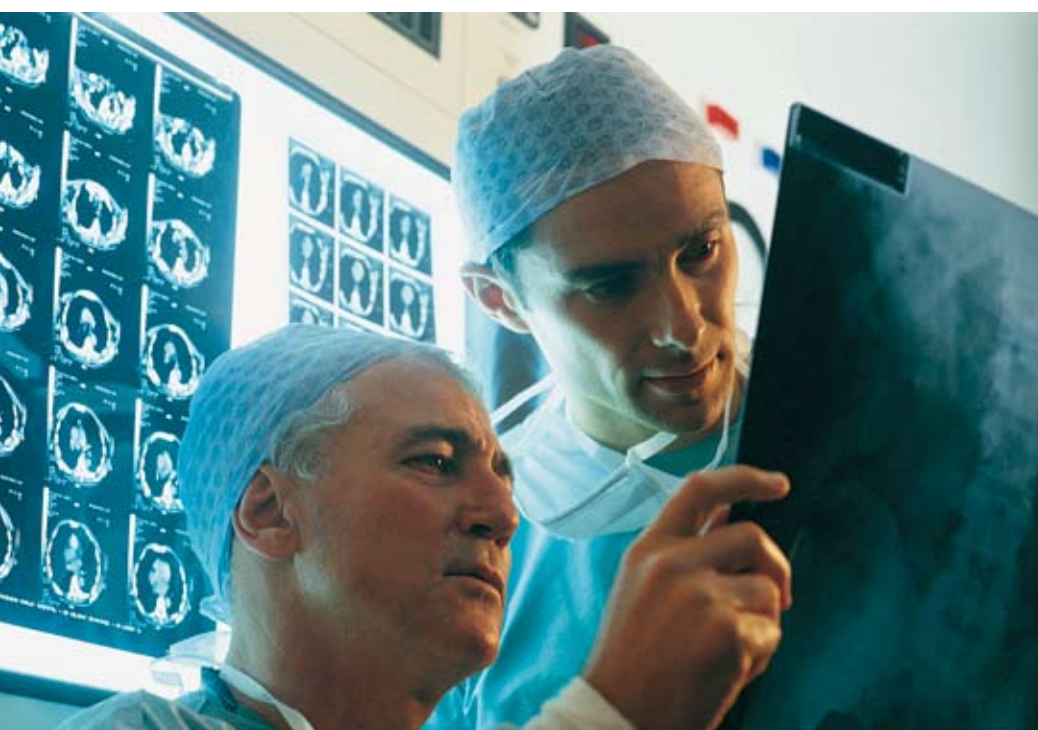
Intelligent buildings also support the transition from sharing information to managing workflow processes, and sharing data between applications and business functions. In short, integrated building solutions do not add costs, they actually deliver a measurable return on investment.

## The US National Institute of Standards Technology (NIST) in a Building & Fire Research Laboratory Study concluded that:

For every \$1 invested in integrated systems and services, \$4.57 is returned. That is an adjusted internal rate of return (IRR) of 20% per year over a 12 year period (2003-2015).

Typical cost savings include: energy, \$0.16/ft<sup>2</sup>; maintenance, \$0.15/ft<sup>2</sup>; repair & replacement, \$0.06/ft<sup>2</sup>; occupant productivity, \$4.20.

Data based on US National Institute of Standards Technology (NIST) Building & Fire Research Laboratory Study, 2001.



# Choosing the right integration partner at the start of a project will optimize the benefits of a fully integrated, intelligent building.



## MAKING INTEGRATION HAPPEN

With 75% of a building's expenses consisting of maintenance and operating costs, decisions taken at the design and construction phases have far-reaching financial and operational implications. Choosing the right integration partner is another challenge. At Honeywell Building Solutions we understand the true meaning of integration and can factor in critical variables such as your financial goals, your business objectives and your need to prove regulatory and legal compliance.

Timing is another critical consideration. A fully integrated design is needed from the start of a project to fully capture all the benefits of an intelligent building.

## THE VALUE OF NETWORKS

### Overview

Your choice of IT network is crucial. Successful projects call for an experienced IT solutions provider, a team that understands the true meaning of integration and the inherent need for a flexible, robust infrastructure that can accommodate change over time and distance. They should complement the Design Management Contractor's expertise and resources, and contribute to the development of an innovative solution – from design through ongoing maintenance.

As a technology leader and building solutions provider, Honeywell has embraced IT and the Internet – the point of convergence and the enabler pulling together a range of hitherto disparate industries. For fact, Honeywell has been a leader in direct connectivity of its control systems to TCP/IP for almost ten years. Our practice of bringing building management and IT systems together sets us apart and adds significant value to the delivery of an intelligent building.

Today, IT networks are a vital backbone for any organization, being critical to both business and operational systems and providing quicker, more informed decision-making.

## Key considerations

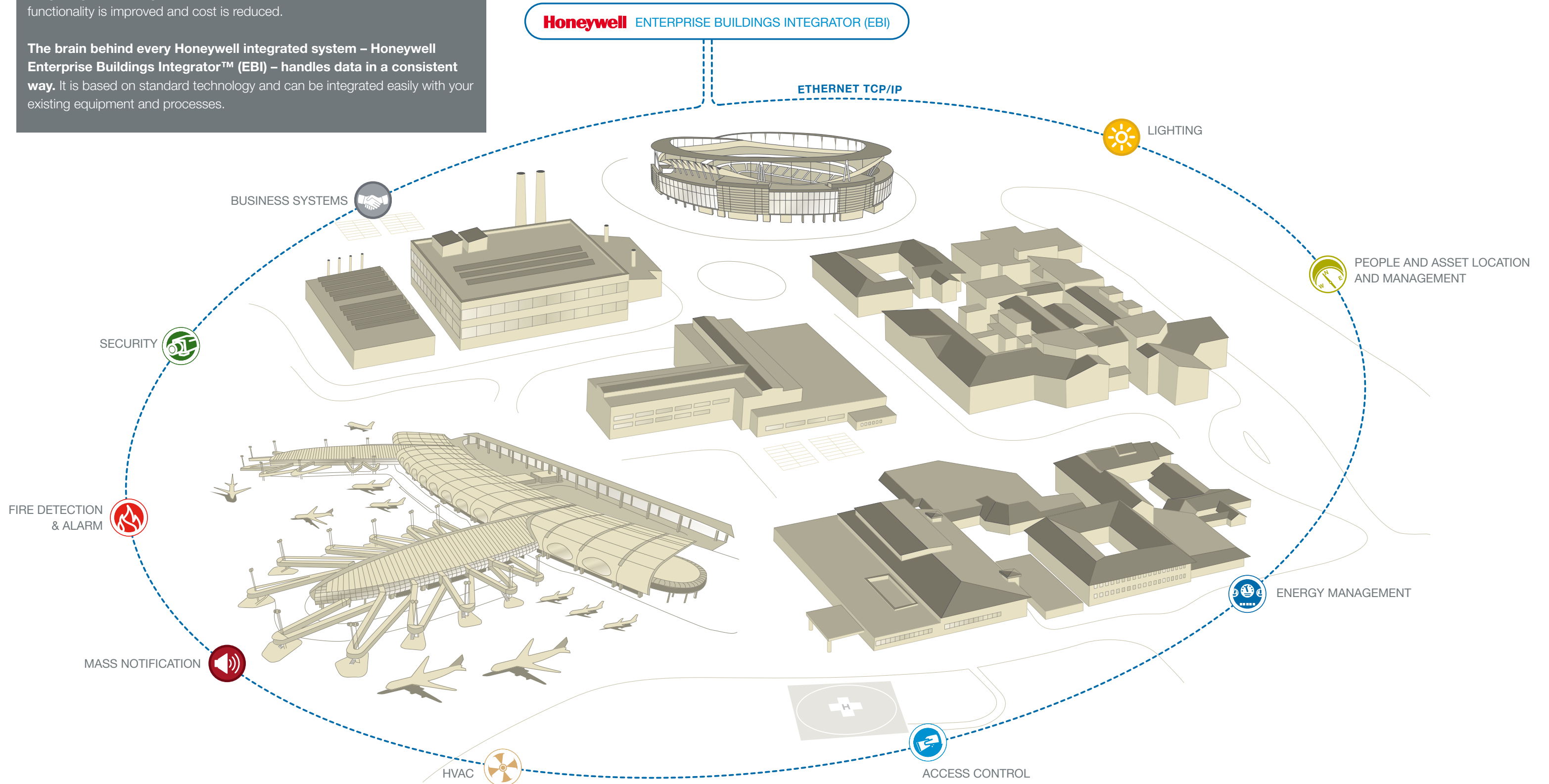
- Understand your own needs and the technology available to you
- Expert advice from the start: design decisions that ensure value for money, low risk project delivery and seamless integration
- Robustness: 24/7 network availability
- Design optimization: system architecture needs to be flexible and scalable
- Monitoring and management: planning load/capacity, identifying potential problems and performing upgrades, accommodating changes to business needs/floor plans
- Select a supplier that will take the time to understand your needs



# Intelligent solutions for airports, stadiums, hospitals, retail centers, commercial offices, government institutions and the life sciences.

Honeywell systems have clearly defined migration paths and are truly open in design so you are not tied into one proprietary provider or solution. By integrating our building and network solutions we are able to ensure that functionality is improved and cost is reduced.

The brain behind every Honeywell integrated system – Honeywell Enterprise Buildings Integrator™ (EBI) – handles data in a consistent way. It is based on standard technology and can be integrated easily with your existing equipment and processes.



# Honeywell intelligent solutions – achieving efficient operation between systems to minimize cost and reduce risk.



## BUSINESS SYSTEMS:

- SAP/PeopleSoft HR modules: automated linkage with access control – access rights restricted to current staff, new hire permissions given with minimal delay
- Information systems (e.g., FIDs)
- Finance systems
- Fidelio Hotel Booking System



## SECURITY:

- Identifies security breaches and false alarms
- Infrared cameras ensure peripheral areas are covered especially during hours of darkness
- Event-driven video recording and retrieval
- Completes recordings for evidence and post-incident analysis
- Powerful search capabilities
- Empowers security staff
- Productivity improvement
- Scalable over time and distance
- Fire detection & alarm
- State-of-the-art detection technologies with integrated mass notification for a safer facility
- Minimize unwanted alarms
- Regulatory compliance
- Emergency evacuation management
- Electronic mustering
- Faster, more effective safety management



## FIRE DETECTION & ALARM:

- Minimize unwanted alarms
- Regulatory compliance
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## MASS NOTIFICATION:

- Automated passenger announcements linked to data within the FIDs
- Efficient emergency communication
- Speeds safe evacuation
- Uses Voice over IP technologies



## HEATING, VENTILATION AND AIR CONDITIONING:

- Optimum control of environmental conditions (temperature, humidity) at all times of the day
- Efficient operation of the plant (boilers, chillers, pumps, batteries, etc.)
- Automated notification of out-of-bounds conditions
- Assists with identification of problem areas
- Certified smoke control solutions for emergencies



## ACCESS CONTROL:

- Authenticates ID of employees, contractors and visitors alike
- Timely management of access privileges for places and equipment
- On-line electronic muster stations improve safety
- Reception management
- Streamlines process time



## ENERGY MANAGEMENT:

- Identify where energy is consumed and apportion costs accordingly
- Manage usage to targets and improve consumption year-to-year
- Custom energy management solutions
- Keystone of sustainability program
- Remote monitoring
- Automatic billing



## PEOPLE AND ASSET LOCATION AND MANAGEMENT:

- Instantly locate people and equipment
- Improve productivity of staff and assets across your enterprise
- Reduce theft, loss and hoarding
- Reduce capital outlay



## LIGHTING:

- Automated control of lighting appropriate to prevailing conditions
- Scheduled operation (day, night, holidays)
- Linkage with other systems such as access control, intruder, fire and HVAC ensures correct lighting under all circumstances



# Integrated functionality delivers a safer, more secure, more comfortable and energy efficient, more productive and innovative facility.

The Honeywell Enterprise Buildings Integrator (EBI) lies at the core of our intelligent solutions. It uses the latest technology in Internet Protocol (IP) and operating systems from Microsoft. All system controllers for heating, ventilation and air conditioning (HVAC), access control, fire detection, energy management and digital video surveillance subsystems also use IP networking.

The EBI platform, the point at which the different applications come together, provides a common operator interface with built-in redundancy. Rather than look at a bank of monitors, all data comes together into one graphical user interface on a PC screen.

The overall system's intelligence stems from EBI's ability to seamlessly integrate the different building, security and life safety management systems as well as link with key business functions such as personnel, financial and supply chain databases. The result is a facility that is safer and more secure, more comfortable and energy efficient, more productive and innovative.

## EBI INTEGRATES BUILDING, SECURITY AND LIFE SAFETY MANAGEMENT AND BUSINESS SYSTEMS

- Handles data in a consistent way
- Based on standard technology
- Integrates easily with your existing systems and processes

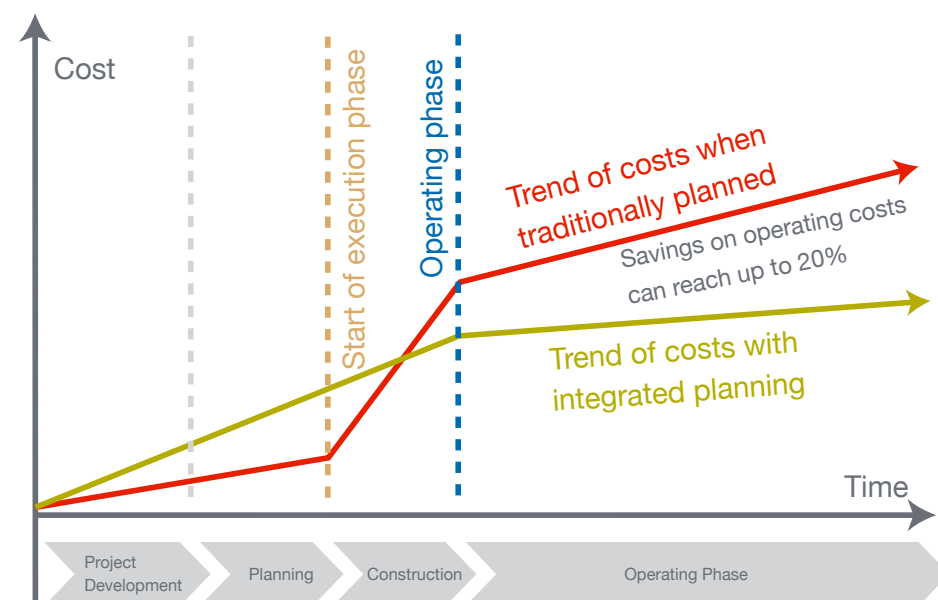
## EBI DELIVERS OPERATIONAL BENEFITS

- Greater comfort
- Safer and more secure
- Improved planning and better resource allocation
- Quicker, more effective handling of incident management
- Improved monitoring and management of changes to procedures and maintenance programs
- Enhanced service delivery
- Reduced risk

## EBI DELIVERS ECONOMIC BENEFITS

- Improved productivity, better resource availability and deployment
- Clear understanding and control over energy consumption
- Implementation of automatic billing system by transaction, based on measured consumption and utilization of assets
- Cost control and improved cash generation
- Higher return on investment
- Multi-vendor solutions with True Open Systems
- Cost-effective open architecture supports leading open industry standards including BACnet®, OPC®, LonWorks® and Modbus™

## LOWER OPERATING COSTS



## EBI INCREASES PRODUCTIVITY

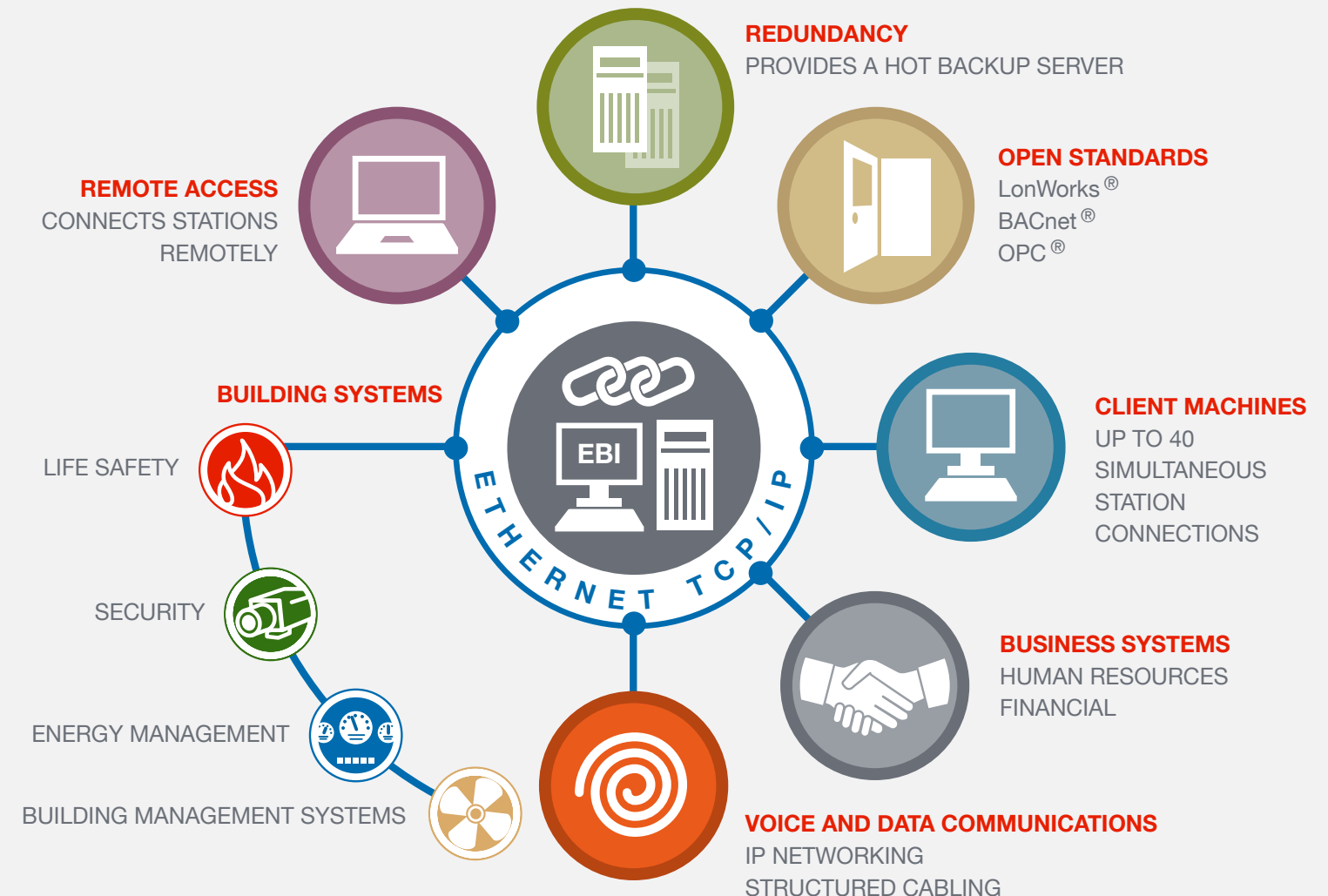
- Intuitive graphical user interface reduces the need for operator training and improves efficiency
- Reduces administration tasks: no need to enter repetitive data for different parts of your system
- Empowers operators and staff

## EBI GROWS WITH YOUR BUSINESS

- Fully scalable
- Fits all buildings (or groups of buildings)
- Grows with your business, integrating seamlessly to accommodate new installations

## EBI REDUCES RISK

- Clearly defined migration paths
- Open design supports choice: you are not tied into a single proprietary provider or solution
- Integrating building and network solutions drives improved functionality and cost reduction



# Delivering measurable value to customers around the world.



**Honeywell Building Solutions is the leading global provider of intelligent building, security and life safety management solutions. Our intelligent technology is delivering measurable value to companies around the world.**

## HEALTHCARE

Texas Scottish Rite Hospital for Children is a not-for-profit hospital dedicated to providing advanced care to children with orthopedic conditions, neurological problems and learning disorders. Located in Dallas, Texas, the institution wanted to upgrade and expand their 865,000-square foot, five-building campus. Based on a relationship that dated back to the 1990's, the hospital chose Honeywell to tackle the renovation.

The project included:

- Honeywell Enterprise Buildings Integrator (EBI) management platform
- Unified fire, security and HVAC functions and control
- Upgraded fire, security and access control systems
- Updated card access system saved \$2,000 per year
- Upgraded data reporting helps meet HIPAA compliance measures
- Real-time data helps meet JCAHO accreditation requirements
- Long-term service and maintenance agreement ensures EBI system is maintained and monitored around the clock
- Substantial energy savings on natural gas, electricity and water

## GOVERNMENT OFFICES

Parliament House, a prestigious government building in Canberra, Australia, needed to reduce energy and operating costs while

creating a safer, more secure establishment. An HBS integrated building system (HVAC, access control, security) manages energy consumption, productivity and operational excellence. This solution delivered:

- 40% reduction in building operating costs
- Cut energy usage by AUS \$2.5 million
- Reduced greenhouse gas emissions

## HEALTHCARE

Atrium Hospital Complex in The Netherlands spans three sites – Heerlen, Brunssum and Kerkrade – and 1,200 beds. It performs almost 30,000 operations and 20,000 consultations annually and, managed by Foundation GOZL, it is one of the Limburg region's biggest employers. An HBS integrated solution pulls many different factors together to ensure optimal utility management without detriment to patient comfort. This solution delivered:

- Optimal ROI
- 10%+ savings on annual energy bill
- Smart weather forecasting combined with decision-support tools to balance demand against efficient utility mix
- Ability to capitalize on current market conditions – taking advantage of fluctuating utility prices, new energy sources, changing weather patterns and internal demand profiles
- "Big picture" perspective – informed decision-making
- Productivity improvement





## **Honeywell Building Solutions:**

Technical services and building solutions that help to make facilities safer and more secure, more comfortable and energy efficient, more innovative and productive.

### **Honeywell Building Solutions**

North America:

1985 Douglas Drive North  
Golden Valley, MN 55422-3992  
1 800 345 6770, ext. 606

Europe, Middle East, Africa & India:

Honeywell House  
Arlington Business Park  
Bracknell, United Kingdom RG12 1EB  
+44 (0)870 600 1659  
[www.honeywellbuildingsolutions.co.uk](http://www.honeywellbuildingsolutions.co.uk)

North Asia:

Zhang Jiang Hi-Tech Park  
No. 430 Li Bing Rd., Pudong New Area  
Shanghai, 201203, China  
+86 21 2894 2000

South Asia Pacific:

2 Richardson Place  
Sydney NSW 2113  
+612 9353 7000

[www.honeywell.com](http://www.honeywell.com)

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